

Barnstable County Retirement System

**Governmental Accounting Standards Board (GASB)
Statements No. 67 and 68 Accounting Valuation Report
as of December 31, 2014**





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June 18, 2015

Retirement Board

Barnstable County Retirement System

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Hyannis, MA 02601

Dear Board Members:

We are pleased to submit this Governmental Accounting Standards Board (GASB) Statements No. 67 and 68 Accounting Valuation as of December 31, 2014 for the Barnstable County Retirement System, a cost-sharing multiple-employer defined benefit pension plan. It contains the actuarial information that will need to be disclosed in order to comply with GASB 67 and 68.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist the Board and the member units in preparing their financial reports. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Board and may only be provided to other parties in its entirety. The census and financial information on which our calculations were based was provided by the Barnstable County Retirement System. That assistance is gratefully acknowledged.

The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; and changes in plan provisions or applicable law.

An actuarial valuation is a measurement at a specific date – it is not a prediction of a plan's future financial condition. We have not been retained to perform an analysis of the potential range of financial measurements, except where otherwise noted.

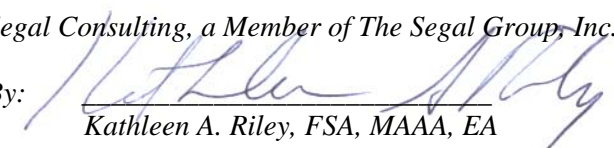
The actuarial calculations were directed under my supervision. I am a member of the American Academy of Actuaries and I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of my knowledge, the information supplied in the actuarial valuation is complete and accurate. Further, in my opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the Plan.

We look forward to reviewing this report with you and to answering any questions.

Sincerely,

Segal Consulting, a Member of The Segal Group, Inc.

By:



Kathleen A. Riley, FSA, MAAA, EA
Senior Vice President and Actuary

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SECTION 1: Valuation Summary for Barnstable County Retirement System

Important Information About Actuarial Valuations

An actuarial valuation is a budgeting tool with respect to the financing of future uncertain obligations of a pension plan. As such, it will never forecast the precise future contribution requirements or the precise future stream of benefit payments. In any event, it is an estimated forecast – the actual cost of the plan will be determined by the benefits and expenses paid, not by the budgeting cost from the actuarial valuation.

In order to prepare a valuation, Segal Consulting (“Segal”) relies on a number of input items. These include:

- **Plan of benefits** Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. It is important for the Board to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our funding valuation report to confirm that Segal has correctly interpreted the plan of benefits.
- **Participant data** An actuarial valuation for a plan is based on data provided to the actuary by the plan. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. For most plans, it is not possible or desirable to take a snapshot of the actual work force on the valuation date. In any event, the actuarial valuation is based on a future work force that is presumed to be the same as the active population included in the valuation, but in fact, employment varies from year to year, sometimes quite considerably. It is not necessary to have perfect data for an actuarial valuation: the valuation is an estimated forecast, not a prediction. The uncertainties in other factors are such that even perfect data does not produce a “perfect” result. Notwithstanding the above, it is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
- **Assets** Part of the cost of a plan will be paid from existing assets – the balance will need to come from future contributions and investment income. The valuation is based on the asset values as of the valuation date, typically reported by the auditor. Some plans include assets, such as private equity holdings, real estate, or hedge funds, that are not subject to valuation by reference to transactions in the marketplace.
- **Actuarial assumptions** In preparing an actuarial valuation, Segal starts by developing a forecast of the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each participant for each year, as well as forecasts of the plan’s benefits for each of those events. The forecasted benefits are then discounted to a present value, typically based on an estimate of the rate of return that will be achieved on the plan’s assets. All of these factors are uncertain and unknowable. Thus, there will be a range of reasonable assumptions, and the results may vary materially based on which assumptions the actuary selects within that range. That is, there is no right answer (except with hindsight). It is important for any user of an actuarial valuation to understand and accept this constraint. The actuarial model may use approximations and estimates that will have an immaterial impact on our results and will have no impact on the actual cost

SECTION 1: Valuation Summary for Barnstable County Retirement System

of the plan. In addition, the actuarial assumptions may change over time, and while this can have a significant impact on the reported results, it does not mean that the previous assumptions or results were unreasonable or wrong.

Given the above, the user of Segal's actuarial valuation (or other actuarial calculations) needs to keep the following in mind:

- The actuarial valuation is prepared at the request of the Board to assist the sponsors of the Fund in preparing their financial report for the pension plan. It includes information for compliance with federal filing requirements and for the plan's auditor. Segal is not responsible for the use or misuse of its report, particularly by any other party.
- An actuarial valuation is a measurement at a specific date — it is not a prediction of a plan's future financial condition. Accordingly, Segal did not perform an analysis of the potential range of financial measurements, except where otherwise noted.
- Sections of this report include actuarial results that are not rounded, but that does not imply precision.
- Critical events for a plan include, but are not limited to, decisions about changes in benefits and contributions. The basis for such decisions needs to consider many factors such as the risk of changes in employment levels and investment losses, not just the current valuation results.
- Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. The Board should look to their other advisors for expertise in these areas.
- While Segal maintains extensive quality assurance procedures, an actuarial valuation involves complex computer models and numerous inputs. In the event that an inaccuracy is discovered after presentation of Segal's valuation, Segal may revise that valuation or make an appropriate adjustment in the next valuation.
- Segal's report shall be deemed to be final and accepted by the Board upon delivery and review. The Board should notify Segal immediately of any questions or concerns about the final content.

As Segal Consulting has no discretionary authority with respect to the management or assets of the Retirement System, it is not a fiduciary in its capacity as actuaries and consultants with respect to the Retirement System.

SECTION 1: Valuation Summary for Barnstable County Retirement System

Purpose

This report has been prepared by Segal Consulting to present certain disclosure information required by Governmental Accounting Standards Board Statements No. 67 and 68 as of December 31, 2014. This report is based on the Barnstable County Retirement System Actuarial Valuation and Review as of January 1, 2014, dated May 27, 2014, which reflects:

- The benefit provisions of Massachusetts General Laws Chapter 32;
- The characteristics of covered active participants, inactive participants, and retired participants and beneficiaries as of January 1, 2014;
- The assets of the Plan as of December 31, 2013;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

Significant Issues in Valuation Year

The following key findings were the result of this actuarial valuation:

- The Governmental Accounting Standards Board (GASB) approved two new Statements affecting the reporting of pension liabilities for accounting purposes. Statement 67 replaces Statement 25 and is for plan reporting. Statement 68 replaces Statement 27 and is for employer reporting. Statement 67 is effective with the fiscal year ending December 31, 2014 for Plan reporting and Statement 68 is effective with the fiscal year ending June 30, 2015 for employer reporting.
- It is important to note that the new GASB rules only redefine pension liability and expense for financial reporting purposes, and do not apply to contribution amounts for pension funding purposes. Employers and plans can still develop and adopt funding policies under current practices.
- The Net Pension Liability (NPL) is equal to the difference between the Total Pension Liability (TPL) and the Plan's Fiduciary Net Position. The Plan's Fiduciary Net Position is equal to the market value of assets and therefore, the NPL measure is very similar to an Unfunded Actuarial Accrued Liability (UAAL) on a market value basis. The NPL increased from \$559.8 million as of December 31, 2013 to \$564.6 million as of December 31, 2014 and the Plan's Fiduciary Net Position as a percent of the TPL increased from 58.65% to 60.43%. Note, these funded percentages are not necessarily appropriate for assessing the sufficiency of Plan assets to cover the estimated cost of setting the Plan's benefit obligation or the need for or the amount of future contributions.

SECTION 1: Valuation Summary for Barnstable County Retirement System

- The NPL was measured as of December 31, 2014 and 2013 and determined based upon the results of the actuarial valuation as of January 1, 2014.
- The discount rate used to determine the TPL and NPL as of December 31, 2014 and 2013 was 7.75%.

SECTION 2: Accounting Information for the Barnstable County Retirement System

EXHIBIT 1

Net Pension Liability

The components of the net pension liability of the Barnstable County Retirement System are as follows:

	December 31, 2014	December 31, 2013
Total pension liability	\$1,426,632,712	\$1,353,810,101
Plan fiduciary net position	862,069,291	793,984,292
System's net pension liability	564,563,421	559,825,809
Plan fiduciary net position as a percentage of the total pension liability*	60.43%	58.65%

* These funded percentages are not necessarily appropriate for assessing the sufficiency of Plan assets to cover the estimated cost of setting the Plan's benefit obligation or the need for or the amount of future contributions.

Actuarial assumptions. The total pension liability as of December 31, 2014 and December 31, 2013 was determined by an actuarial valuation as of December 31, 2013, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	4.00%
Salary increases	Varies by length of service with ultimate rates of 4.25% for Group 1, 4.50% for Group 2 and 4.75% for Group 4
Investment rate of return	7.75%, net of pension plan investment expense, including inflation
Cost of Living Adjustment	3% of first \$15,000
Pre-Retirement:	RP-2000 Employee Mortality Table projected generationally with Scale AA from 2010
Healthy Retiree:	RP-2000 Healthy Annuitant Mortality Table projected generationally with Scale AA from 2010
Disabled Retiree:	RP-2000 Healthy Annuitant Mortality Table set forward three years for males only projected generationally with Scale AA from 2010

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the pension plan's target asset allocation as of December 31, 2013 are summarized in the following table:

SECTION 2: Accounting Information for the Barnstable County Retirement System

Asset Class	Long-Term Expected Real Rate of Return
Domestic equity	6.60%
International developed markets equity	7.10
International emerging markets equity	9.40
Core fixed income	2.20
High-yield fixed income	4.70
Real estate	4.40
Commodities	4.40
Hedge fund, GTAA, Risk parity	3.90
Private equity	11.70

Discount rate: The discount rate used to measure the total pension liability was 7.75%. The projection of cash flows used to determine the discount rate assumed plan member contributions will be made at the current contribution rate and that contributions will be made at rates equal to the actuarially determined contribution rates. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the net pension liability to changes in the discount rate. The following presents the net pension liability, calculated using the discount rate of 7.75%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.75%) or 1-percentage-point higher (8.75%) than the current rate:

	1% Decrease (6.75%)	Current Discount (7.75%)	1% Increase (8.75%)
Barnstable County Retirement System's net pension liability as of December 31, 2014	\$727,809,358	\$564,563,421	\$426,139,338

SECTION 2: Accounting Information for the Barnstable County Retirement System

EXHIBIT 2

Schedule of Changes in the Net Pension Liability – Last Ten Years

	Year End December 31,									
	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005
Total pension liability										
Service cost	\$35,328,892									
Interest	105,040,822									
Differences between expected and actual experience	0									
Changes of assumptions	0									
Changes of benefit terms	0									
Benefit payments, including refunds of employee contributions	-67,547,103									
Net change in total pension liability	\$72,822,611									
Total pension liability - beginning	<u>1,353,810,101</u>									
Total pension liability - ending (a)	<u>\$1,426,632,712</u>									
Plan fiduciary net position										
Contributions - employer	\$51,562,171									
Contributions - employee	24,666,247									
Net investment income	60,614,682									
Benefit payments, including refunds of employee contributions	-67,547,103									
Administrative expenses	-1,210,998									
Net change in fiduciary net position	\$68,084,999									
Plan fiduciary net position - beginning	<u>793,984,292</u>									
Plan fiduciary net position - ending (b)	<u>\$862,069,291</u>									
Net pension liability – ending: (a)-(b)	\$564,563,421									
Plan's fiduciary net position as a percentage of the total pension liability	60.43%									
Covered-employee payroll	\$253,920,106*									
Net pension liability as a percentage of covered-employee payroll	222.34%									

*Covered-employee payroll as reported in the January 1, 2014 funding valuation report.

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EXHIBIT 3

Schedule of Contributions – Last Ten Years

	Year End December 31,									
	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005
Actuarially determined contribution*	\$51,562,171									
Contributions in relation to the actuarially determined contribution	<u>51,562,171</u>									
Contribution deficiency (excess)	<u>\$0</u>									
Covered-employee payroll	\$253,920,106									
Contributions as a percentage of covered-employee payroll	20.31%									

(Historical information prior to implementation of GASB 67/68 is not required)

* Based on the results of the January 1, 2012 actuarial valuation (including assumptions and methods) which determined budgeted appropriation for fiscal 2015, adjusted to reflect actual timing of payments.

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EXHIBIT 4

Pension Expense and Deferred Outflows/Inflows of Resources Related to Pensions

A. Pension expense for the year ended June 30, 2015

Service cost	\$35,328,892
Interest	105,040,822
Contributions – employee	-24,666,247
Projected earnings on pension plan investments	-61,823,257
Administrative expenses	1,210,998
Recognized portion of current-period difference between expected and actual experience	0
Recognized portion of current-period difference between projected and actual earnings on pension plan investments	241,715
Recognized portion of current year period assumption change	0
Recognized portion of current year period plan change	0
Recognition of deferred outflows of resources	0
Recognition of deferred inflows of resources	0
Pension expense for fiscal year ended June 30, 2015	<u>\$55,332,922</u>

B. Deferred outflows/inflows of resources related to pensions

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$0	\$0
Changes of assumptions	0	0
Changes of benefit terms	0	0
Net difference between projected and actual earnings on pension plan investments	<u>966,860</u>	<u>0</u>
Total	\$966,860	\$0

C. Projected recognition of deferred outflows/(inflows)

	Year Ended June 30,	Recognition
	2016	\$241,715
	2017	241,715
	2018	241,715
	2019	241,715
	Thereafter	0

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EXHIBIT 5

Notes to Required Supplementary Information

Valuation date	Actuarial determined contributions are calculated as of January 1 two years prior to the end of the employer's fiscal year in which contributions are reported
Actuarial cost method	Entry Age Normal Cost Method
Amortization method	Payments increase at 4.0%, except for 2010 Early Retirement Incentive, which is a level payment.
Remaining amortization period	22 years from July 1, 2014 for 2002 and 2003 Early Retirement Incentives, retiree sheriffs liability and remaining unfunded liability, and 8 years from July 1, 2014 for 2010 Early Retirement Incentive
Asset valuation method	Sum of actuarial value at beginning of the year, contributions and investment earnings based on the actuarial interest assumption less benefit payments and operating expenses plus 20% of the market value at the end of the year in excess of that sum, plus additional adjustment toward market value as necessary so that final actuarial value is within 20% of market value.

Actuarial assumptions:	
Investment rate of return	7.75% (previously, 7.875%)
Discount rate	7.75% (previously, 7.875%)
Inflation rate	4.0% (previously, 4.5%)
Projected salary increases	Varies by length of service with ultimate rates of 4.25% for Group 1, 4.5% for Group 2 and 4.75% for Group 4. (previously, varied by length of service with ultimate rates of 4.75% for Groups 1 and 2 and 5.25% for Group 4)
Cost of living adjustments	3% of first \$15,000

Plan membership:	
Retired participants and beneficiaries receiving benefits	2,729
Inactive participants entitled to a return of their employee contributions	513
Inactive participants with a vested right to a deferred or immediate benefit	138
Active participants	<u>4,696</u>
Total	8,076

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Changes in Assumptions:

The actuarial cost method was changed to better reflect the impact of the plan changes effective for employees hired on or after April 2, 2012.

The investment return assumption was decreased from 7.875% to 7.75%.

The assumed rates of salary increases were revised to more accurately reflect recent experience and future expectations.

The pre-retirement mortality assumption was changed from the RP-2000 Employee Mortality Table projected 12 years with Scale AA to the RP-2000 Employee Mortality Table projected generationally using Scale AA from 2010.

The post-retirement mortality assumption for non-disabled participants was changed from the RP-2000 Healthy Annuitant Mortality Table projected 12 years with Scale AA to the RP-2000 Healthy Annuitant Mortality Table projected generationally using Scale AA from 2010.

The mortality assumption for disabled participants was changed from the RP-2000 Healthy Annuitant Mortality Table set forward two years projected 12 years with Scale AA to the RP-2000 Healthy Annuitant Mortality Table set forward three years for males only projected generationally using Scale AA from 2010.

The assumed retirement age for inactive vested participants was changed from age 65 to age 55 for Group 1 and 2 members hired prior to April 2, 2012.

Changes in Plan Provisions:

As permitted by Section 19 of Chapter 188 of the Acts of 2010, the Cost of Living Adjustment base was increased from \$14,000 to \$15,000 as of July 1, 2013.

Members hired on or after April 2, 2012 are covered by the provisions of Chapter 32 as amended by of Chapter 176 of the Acts of 2011 and Chapter 139 of the Acts of 2012.

As permitted by Section 63 of Chapter 139 of the Acts of 2012, the Board has increased the Section 101 annual allowance from \$9,000 to \$12,000.

As permitted by Section 29 of Chapter 176 of the Acts of 2011, the Board has increased the Section 12 monthly allowance from \$250 to \$500.

SECTION 2: Accounting Information for the Barnstable County Retirement System

EXHIBIT 6

Determination of Proportionate Share

Employer Name	FY 2015 Total Appropriation	Percent of Total Appropriation excluding County Hospital and Retired Sheriffs	Share of NPL	Percent of Total NPL
Barnstable County	\$2,592,085	5.044766%	\$27,571,252	4.883641%
County Hospital	6,831	0.000000%	102,751	0.018200%
Retired Sheriffs	1,085,077	0.000000%	17,928,841	3.175700%
Town of Barnstable	8,005,609	15.580674%	85,153,343	15.083043%
Barnstable Fire	332,498	0.647114%	3,536,684	0.626446%
Barnstable Housing	160,192	0.311769%	1,703,917	0.301811%
Town of Bourne	3,226,423	6.279327%	34,318,521	6.078772%
Bourne Housing	70,788	0.137769%	752,951	0.133369%
Bourne Recreation	106,187	0.206663%	1,129,479	0.200062%
Bourne Water	120,694	0.234897%	1,283,787	0.227395%
Town of Brewster	1,921,285	3.739242%	20,436,148	3.619814%
Brewster Housing Authority	20,225	0.039362%	215,126	0.038105%
Buzzards Bay Water	60,676	0.118089%	645,394	0.114317%
Cape Code Mosquito	224,884	0.437674%	2,392,028	0.423695%
Cape Cod Regional Technical High School	404,503	0.787252%	4,302,583	0.762108%
C.O.M.M. Fire	1,197,680	2.330948%	12,739,373	2.256500%
Town of Chatham	1,755,360	3.416316%	18,671,254	3.307202%
Chatham Housing	30,338	0.059044%	322,694	0.057158%
Cotuit Fire	242,702	0.472351%	2,581,549	0.457265%
Town of Dennis	2,715,229	5.284432%	28,881,103	5.115653%
Dennis Housing	52,861	0.102879%	562,266	0.099593%
Dennis Water	247,758	0.482191%	2,635,327	0.466790%
Dennis-Yarmouth Regional School	1,152,835	2.243670%	12,262,371	2.172009%

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Employer Name	FY 2015 Total Appropriation	Percent of Total Appropriation excluding County Hospital and Retired Sheriffs	Share of NPL	Percent of Total NPL
Town of Eastham	1,340,830	2.609549%	14,262,016	2.526203%
Town of Harwich	2,260,163	4.398773%	24,040,695	4.258281%
Hyannis Fire	952,101	1.852997%	10,127,218	1.793814%
Town of Mashpee	2,526,493	4.917110%	26,873,571	4.760062%
Mashpee Housing	35,394	0.068884%	376,473	0.066684%
Mashpee Water	145,401	0.282982%	1,546,587	0.273944%
Town of Nantucket	5,046,242	9.821094%	53,675,405	9.507418%
Nantucket Housing	20,225	0.039362%	215,126	0.038105%
County of Nantucket	187,083	0.364105%	1,989,950	0.352476%
Nantucket Regional Transportation Authority	30,338	0.059044%	322,694	0.057158%
Nauset Regional School	712,937	1.387532%	7,583,304	1.343216%
North Sagamore Water	45,507	0.088567%	484,047	0.085738%
Town of Orleans	1,673,633	3.257257%	17,801,946	3.153223%
Orleans Housing	40,450	0.078725%	430,257	0.076211%
Ground Water Protection District	75,844	0.147609%	806,730	0.142894%
Town of Provincetown	1,420,818	2.765224%	15,112,829	2.676905%
Town of Sandwich	3,043,888	5.924074%	32,376,950	5.734865%
Sandwich Housing	25,281	0.049202%	268,905	0.047631%
Sandwich Water	192,139	0.373945%	2,043,728	0.362001%
Town of Truro	962,900	1.874015%	10,242,088	1.814161%
Veterans District	49,195	0.095744%	523,271	0.092686%
Town of Wellfleet	983,709	1.914514%	10,463,428	1.853366%
Town of Yarmouth	3,783,411	7.363348%	40,243,041	7.128170%
Yarmouth Housing	39,094	0.076086%	415,834	0.073656%

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Employer Name	FY 2015 Total Appropriation	Percent of Total Appropriation excluding County Hospital and Retired Sheriffs	Share of NPL	Percent of Total NPL
West Barnstable Fire	96,070	0.186973%	1,021,867	0.181001%
Cape Cod Regional Transit Authority	171,914	0.334582%	1,828,597	0.323896%
Monomoy Regional School District	879,795	1.712274%	9,358,122	1.657586%
Grand Totals:	\$52,473,575	100%	\$564,563,421	100%

Note: NPL for County Hospital and Retired Sheriffs estimated based on January 1, 2014 actuarial valuation. NPL for all other employers is allocated based on Fiscal 2015 appropriation.

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EXHIBIT 7

Determination of Pension Amounts by Employer as of June 30, 2015

Employer Name	Employer's Proportionate Share Allocation (1)	Net Pension Liability (2)	Covered Employee Payroll (3)	Discount Rate Sensitivity		
				1% Decrease (6.75%) (4)	Current Discount Rate (7.75%) (5)	1% Increase (8.75%) (6)
Barnstable County	4.883641%	\$27,571,251	\$12,809,675	\$35,543,596	\$27,571,251	\$20,811,115
County Hospital	0.018200%	102,751	-	132,461	102,751	77,557
Retired Sheriffs	3.175700%	17,928,841	-	23,113,042	17,928,841	13,532,907
Town of Barnstable	15.083043%	85,153,344	39,562,464	109,775,798	85,153,344	64,274,780
Barnstable Fire	0.626446%	3,536,685	1,643,153	4,559,333	3,536,685	2,669,533
Barnstable Housing	0.301811%	1,703,915	791,644	2,196,609	1,703,915	1,286,135
Town of Bourne	6.078772%	34,318,523	15,944,474	44,241,871	34,318,523	25,904,039
Bourne Housing	0.133369%	752,953	349,823	970,672	752,953	568,338
Bourne Recreation	0.200062%	1,129,477	524,759	1,456,070	1,129,477	852,543
Bourne Water	0.227395%	1,283,789	596,451	1,655,002	1,283,789	969,020
Town of Brewster	3.619814%	20,436,146	9,494,687	26,345,345	20,436,146	15,425,451
Brewster Housing Authority	0.038105%	215,127	99,948	277,332	215,127	162,380
Buzzards Bay Water	0.114317%	645,392	299,852	832,010	645,392	487,150
Cape Code Mosquito	0.423695%	2,392,027	1,111,342	3,083,692	2,392,027	1,805,531
Cape Cod Regional Technical High School	0.762108%	4,302,583	1,998,991	5,546,693	4,302,583	3,247,642
C.O.M.M. Fire	2.256500%	12,739,374	5,918,746	16,423,018	12,739,374	9,615,834
Town of Chatham	3.307202%	18,671,253	8,674,713	24,070,126	18,671,253	14,093,289
Chatham Housing	0.057158%	322,693	149,925	416,001	322,693	243,573
Cotuit Fire	0.457265%	2,581,551	1,199,394	3,328,017	2,581,551	1,948,586
Town of Dennis	5.115653%	28,881,106	13,418,235	37,232,201	28,881,106	21,799,810
Dennis Housing	0.099593%	562,266	261,230	724,847	562,266	424,405
Dennis Water	0.466790%	2,635,326	1,224,380	3,397,341	2,635,326	1,989,176
Dennis-Yarmouth Regional School	2.172009%	12,262,368	5,697,129	15,808,085	12,262,368	9,255,785

SECTION 2: Accounting Information for the Barnstable County Retirement System

Employer Name	Employer's Proportionate Share Allocation (1)	Net Pension Liability (2)	Covered Employee Payroll (3)	Discount Rate Sensitivity		
				1% Decrease (6.75%) (4)	Current Discount Rate (7.75%) (5)	1% Increase (8.75%) (6)
Town of Eastham	2.526203%	14,262,018	6,626,170	18,385,942	14,262,018	10,765,145
Town of Harwich	4.258281%	24,040,697	11,169,369	30,992,168	24,040,697	18,146,210
Hyannis Fire	1.793814%	10,127,218	4,705,132	13,055,546	10,127,218	7,644,147
Town of Mashpee	4.760062%	26,873,569	12,485,531	34,644,177	26,873,569	20,284,497
Mashpee Housing	0.066684%	376,473	174,910	485,332	376,473	284,167
Mashpee Water	0.273944%	1,546,588	718,548	1,993,790	1,546,588	1,167,383
Town of Nantucket	9.507418%	53,675,404	24,937,732	69,195,878	53,675,404	40,514,848
Nantucket Housing	0.038105%	215,127	99,948	277,332	215,127	162,380
County of Nantucket	0.352476%	1,989,951	924,536	2,565,353	1,989,951	1,502,039
Nantucket Regional Transportation Authority	0.057158%	322,693	149,925	416,001	322,693	243,573
Nauset Regional School	1.343216%	7,583,306	3,523,223	9,776,052	7,583,306	5,723,972
North Sagamore Water	0.085738%	484,045	224,889	624,009	484,045	365,363
Town of Orleans	3.153223%	17,801,944	8,270,830	22,949,452	17,801,944	13,437,124
Orleans Housing	0.076211%	430,259	199,899	554,671	430,259	324,765
Ground Water Protection District	0.142894%	806,727	374,809	1,039,996	806,727	608,928
Town of Provincetown	2.676905%	15,112,826	7,021,460	19,482,765	15,112,826	11,407,345
Town of Sandwich	5.734865%	32,376,950	15,042,415	41,738,884	32,376,950	24,438,516
Sandwich Housing	0.047631%	268,907	124,934	346,663	268,907	202,974
Sandwich Water	0.362001%	2,043,725	949,522	2,634,677	2,043,725	1,542,629
Town of Truro	1.814161%	10,242,089	4,758,501	13,203,634	10,242,089	7,730,854
Veterans District	0.092686%	523,271	243,113	674,577	523,271	394,972
Town of Wellfleet	1.853366%	10,463,426	4,861,336	13,488,971	10,463,426	7,897,922
Town of Yarmouth	7.128170%	40,243,040	18,697,021	51,879,488	40,243,040	30,375,936
Yarmouth Housing	0.073656%	415,835	193,198	536,075	415,835	313,877

SECTION 2: Accounting Information for the Barnstable County Retirement System

Employer Name	Employer's Proportionate Share Allocation (1)	Net Pension Liability (2)	Covered Employee Payroll (3)	Discount Rate Sensitivity		
				1% Decrease (6.75%) (4)	Current Discount Rate (7.75%) (5)	1% Increase (8.75%) (6)
West Barnstable Fire	0.181001%	1,021,865	474,762	1,317,342	1,021,865	771,316
Cape Cod Regional Transit Authority	0.323896%	1,828,598	849,571	2,357,345	1,828,598	1,380,248
Monomoy Regional School District	1.657586%	9,358,124	4,347,808	12,064,066	9,358,124	7,063,626
Grand Totals:	100%	\$564,563,416	\$253,920,106	\$727,809,348	\$564,563,416	\$426,139,335

Note: Columns may not add due to rounding.

SECTION 2: Accounting Information for the Barnstable County Retirement System

Employer Name	Schedule of Contributions				Pension Expense		
	Statutory Required Contribution (7)	Contributions In Relation to the Statutory Required Contribution (8)	Contribution Deficiency/ (Excess) (9)	Contributions as a Percentage of Covered Employee Payroll (10)	Proportionate Share of Plan Pension Expense (11)	Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions (12)	Total Employer Pension Expense (13)
Barnstable County	\$2,547,090	\$(2,547,090)	\$-	19.88%	\$2,702,261	\$-	\$2,702,261
County Hospital	6,703	(6,703)	-	N/A	10,071	-	10,071
Retired Sheriffs	1,064,708	(1,064,708)	-	N/A	1,757,208	0	1,757,208
Town of Barnstable	7,858,269	(7,858,269)	-	19.86%	8,345,888	0	8,345,888
Barnstable Fire	326,256	(326,256)	-	19.86%	346,631	0	346,631
Barnstable Housing	160,192	(160,192)	-	20.24%	167,001	0	167,001
Town of Bourne	3,160,253	(3,160,253)	-	19.82%	3,363,562	0	3,363,562
Bourne Housing	70,788	(70,788)	-	20.24%	73,797	0	73,797
Bourne Recreation	106,187	(106,187)	-	20.24%	110,700	0	110,700
Bourne Water	118,428	(118,428)	-	19.86%	125,824	0	125,824
Town of Brewster	1,885,218	(1,885,218)	-	19.86%	2,002,949	0	2,002,949
Brewster Housing Authority	20,225	(20,225)	-	20.24%	21,085	0	21,085
Buzzards Bay Water	60,676	(60,676)	-	20.24%	63,255	0	63,255
Cape Code Mosquito	220,662	(220,662)	-	19.86%	234,443	0	234,443
Cape Cod Regional Technical High School	396,910	(396,910)	-	19.86%	421,697	0	421,697
C.O.M.M. Fire	1,197,680	(1,197,680)	-	20.24%	1,248,587	0	1,248,587
Town of Chatham	1,734,970	(1,734,970)	-	20.00%	1,829,972	0	1,829,972
Chatham Housing	30,338	(30,338)	-	20.24%	31,627	0	31,627
Cotuit Fire	238,146	(238,146)	-	19.86%	253,018	0	253,018
Town of Dennis	2,666,977	(2,666,977)	-	19.88%	2,830,640	0	2,830,640
Dennis Housing	52,861	(52,861)	-	20.24%	55,108	0	55,108
Dennis Water	243,107	(243,107)	-	19.86%	258,289	0	258,289
Dennis-Yarmouth Regional School	1,131,194	(1,131,194)	-	19.86%	1,201,836	0	1,201,836

SECTION 2: Accounting Information for the Barnstable County Retirement System

Employer Name	Schedule of Contributions				Pension Expense		
	Statutory Required Contribution (7)	Contributions In Relation to the Statutory Required Contribution (8)	Contribution Deficiency/ (Excess) (9)	Contributions as a Percentage of Covered Employee Payroll (10)	Proportionate Share of Plan Pension Expense (11)	Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions (12)	Total Employer Pension Expense (13)
Town of Eastham	1,317,678	(1,317,678)	-	19.89%	1,397,822	0	1,397,822
Town of Harwich	2,217,735	(2,217,735)	-	19.86%	2,356,231	0	2,356,231
Hyannis Fire	934,228	(934,228)	-	19.86%	992,570	0	992,570
Town of Mashpee	2,479,065	(2,479,065)	-	19.86%	2,633,881	0	2,633,881
Mashpee Housing	35,394	(35,394)	-	20.24%	36,898	0	36,898
Mashpee Water	142,671	(142,671)	-	19.86%	151,581	0	151,581
Town of Nantucket	4,958,625	(4,958,625)	-	19.88%	5,260,732	0	5,260,732
Nantucket Housing	20,225	(20,225)	-	20.24%	21,085	0	21,085
County of Nantucket	183,571	(183,571)	-	19.86%	195,035	0	195,035
Nantucket Regional Transportation Authority	30,338	(30,338)	-	20.24%	31,627	0	31,627
Nauset Regional School	699,654	(699,654)	-	19.86%	743,241	0	743,241
North Sagamore Water	44,653	(44,653)	-	19.86%	47,441	0	47,441
Town of Orleans	1,642,215	(1,642,215)	-	19.86%	1,744,770	0	1,744,770
Orleans Housing	40,450	(40,450)	-	20.24%	42,170	0	42,170
Ground Water Protection District	75,844	(75,844)	-	20.24%	79,067	0	79,067
Town of Provincetown	1,394,146	(1,394,146)	-	19.86%	1,481,210	0	1,481,210
Town of Sandwich	2,986,747	(2,986,747)	-	19.86%	3,173,268	0	3,173,268
Sandwich Housing	25,281	(25,281)	-	20.24%	26,356	0	26,356
Sandwich Water	188,532	(188,532)	-	19.86%	200,306	0	200,306
Town of Truro	944,824	(944,824)	-	19.86%	1,003,828	0	1,003,828
Veterans District	48,271	(48,271)	-	19.86%	51,286	0	51,286
Town of Wellfleet	965,243	(965,243)	-	19.86%	1,025,522	0	1,025,522
Town of Yarmouth	3,717,523	(3,717,523)	-	19.88%	3,944,225	0	3,944,225
Yarmouth Housing	39,094	(39,094)	-	20.24%	40,756	0	40,756

SECTION 2: Accounting Information for the Barnstable County Retirement System

Employer Name	Schedule of Contributions				Pension Expense		
	Statutory Required Contribution (7)	Contributions In Relation to the Statutory Required Contribution (8)	Contribution Deficiency/ (Excess) (9)	Contributions as a Percentage of Covered Employee Payroll (10)	Proportionate Share of Plan Pension Expense (11)	Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions (12)	Total Employer Pension Expense (13)
West Barnstable Fire	94,267	(94,267)	-	19.86%	100,153	0	100,153
Cape Cod Regional Transit Authority	171,914	(171,914)	-	20.24%	179,221	0	179,221
Monomoy Regional School District	866,145	(866,145)	-	19.92%	917,191	0	917,191
Grand Totals:	\$51,562,171	\$(51,562,171)	-	20.31%	\$55,332,922	-	\$55,332,922

Note: Columns may not add due to rounding.

SECTION 2: Accounting Information for the Barnstable County Retirement System

Employer Name	Deferred Outflows of Resources					Deferred Inflows of Resources				
	Differences Between Expected and Actual Experience (14)	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments (2)	Changes of Assumptions (15)	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions (16)	Total Deferred Outflows of Resources (17)	Differences Between Expected and Actual Experience (18)	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments (19)	Changes of Assumptions (20)	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions (21)	Total Deferred Inflows of Resources (22)
Barnstable County	\$-	\$47,218	\$-	\$-	\$47,218	\$-	\$-	\$-	\$-	\$-
County Hospital	-	176	-	-	176	-	-	-	-	-
Retired Sheriffs	-	30,705	-	-	30,705	-	-	-	-	-
Town of Barnstable	-	145,832	-	-	145,832	-	-	-	-	-
Barnstable Fire	-	6,057	-	-	6,057	-	-	-	-	-
Barnstable Housing	-	2,918	-	-	2,918	-	-	-	-	-
Town of Bourne	-	58,773	-	-	58,773	-	-	-	-	-
Bourne Housing	-	1,289	-	-	1,289	-	-	-	-	-
Bourne Recreation	-	1,934	-	-	1,934	-	-	-	-	-
Bourne Water	-	2,199	-	-	2,199	-	-	-	-	-
Town of Brewster	-	34,999	-	-	34,999	-	-	-	-	-
Brewster Housing Authority	-	368	-	-	368	-	-	-	-	-
Buzzards Bay Water	-	1,105	-	-	1,105	-	-	-	-	-
Cape Code Mosquito	-	4,097	-	-	4,097	-	-	-	-	-
Cape Cod Regional Technical High School	-	7,369	-	-	7,369	-	-	-	-	-
C.O.M.M. Fire	-	21,817	-	-	21,817	-	-	-	-	-
Town of Chatham	-	31,976	-	-	31,976	-	-	-	-	-
Chatham Housing	-	553	-	-	553	-	-	-	-	-
Cotuit Fire	-	4,421	-	-	4,421	-	-	-	-	-
Town of Dennis	-	49,461	-	-	49,461	-	-	-	-	-
Dennis Housing	-	963	-	-	963	-	-	-	-	-
Dennis Water	-	4,513	-	-	4,513	-	-	-	-	-
Dennis-Yarmouth Regional School	-	21,000	-	-	21,000	-	-	-	-	-

SECTION 2: Accounting Information for the Barnstable County Retirement System

Employer Name	Deferred Outflows of Resources					Deferred Inflows of Resources				
	Differences Between Expected and Actual Experience (14)	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments (2)	Changes of Assumptions (15)	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions (16)	Total Deferred Outflows of Resources (17)	Differences Between Expected and Actual Experience (18)	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments (19)	Changes of Assumptions (20)	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions (21)	Total Deferred Inflows of Resources (22)
Town of Eastham	-	24,425	-	-	24,425	-	-	-	-	-
Town of Harwich	-	41,172	-	-	41,172	-	-	-	-	-
Hyannis Fire	-	17,344	-	-	17,344	-	-	-	-	-
Town of Mashpee	-	46,023	-	-	46,023	-	-	-	-	-
Mashpee Housing	-	645	-	-	645	-	-	-	-	-
Mashpee Water	-	2,649	-	-	2,649	-	-	-	-	-
Town of Nantucket	-	91,923	-	-	91,923	-	-	-	-	-
Nantucket Housing	-	368	-	-	368	-	-	-	-	-
County of Nantucket	-	3,408	-	-	3,408	-	-	-	-	-
Nantucket Regional Transportation Authority	-	553	-	-	553	-	-	-	-	-
Nauset Regional School	-	12,987	-	-	12,987	-	-	-	-	-
North Sagamore Water	-	829	-	-	829	-	-	-	-	-
Town of Orleans	-	30,487	-	-	30,487	-	-	-	-	-
Orleans Housing	-	737	-	-	737	-	-	-	-	-
Ground Water Protection District	-	1,382	-	-	1,382	-	-	-	-	-
Town of Provincetown	-	25,882	-	-	25,882	-	-	-	-	-
Town of Sandwich	-	55,448	-	-	55,448	-	-	-	-	-
Sandwich Housing	-	461	-	-	461	-	-	-	-	-
Sandwich Water	-	3,500	-	-	3,500	-	-	-	-	-
Town of Truro	-	17,540	-	-	17,540	-	-	-	-	-
Veterans District	-	896	-	-	896	-	-	-	-	-
Town of Wellfleet	-	17,919	-	-	17,919	-	-	-	-	-
Town of Yarmouth	-	68,919	-	-	68,919	-	-	-	-	-
Yarmouth Housing	-	712	-	-	712	-	-	-	-	-

SECTION 2: Accounting Information for the Barnstable County Retirement System

Employer Name	Deferred Outflows of Resources					Deferred Inflows of Resources				
	Differences Between Expected and Actual Experience (14)	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments (2)	Changes of Assumptions (15)	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions (16)	Total Deferred Outflows of Resources (17)	Differences Between Expected and Actual Experience (18)	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments (19)	Changes of Assumptions (20)	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions (21)	Total Deferred Inflows of Resources (22)
West Barnstable Fire	-	1,750	-	-	1,750	-	-	-	-	-
Cape Cod Regional Transit Authority	-	3,132	-	-	3,132	-	-	-	-	-
Monomoy Regional School District	-	16,027	-	-	16,027	-	-	-	-	-
Grand Totals:	-	\$966,861	-	-	\$966,861	-	-	-	-	-

Note: Columns may not add due to rounding.

SECTION 2: Accounting Information for the Barnstable County Retirement System

Employer Name	Deferred Inflows/(Outflows) Recognized In Future Pension Expense (Year Ended June 30):					
	2016 (23)	2017 (24)	2018 (25)	2019 (26)	2020 (27)	Thereafter (28)
Barnstable County	\$11,804	\$11,804	\$11,804	\$11,804	\$-	\$-
County Hospital	44	44	44	44	-	-
Retired Sheriffs	7,676	7,676	7,676	7,676	-	-
Town of Barnstable	36,458	36,458	36,458	36,458	-	-
Barnstable Fire	1,514	1,514	1,514	1,514	-	-
Barnstable Housing	730	730	730	730	-	-
Town of Bourne	14,693	14,693	14,693	14,693	-	-
Bourne Housing	322	322	322	322	-	-
Bourne Recreation	484	484	484	484	-	-
Bourne Water	550	550	550	550	-	-
Town of Brewster	8,750	8,750	8,750	8,750	-	-
Brewster Housing Authority	92	92	92	92	-	-
Buzzards Bay Water	276	276	276	276	-	-
Cape Code Mosquito	1,024	1,024	1,024	1,024	-	-
Cape Cod Regional Technical High School	1,842	1,842	1,842	1,842	-	-
C.O.M.M. Fire	5,454	5,454	5,454	5,454	-	-
Town of Chatham	7,994	7,994	7,994	7,994	-	-
Chatham Housing	138	138	138	138	-	-
Cotuit Fire	1,105	1,105	1,105	1,105	-	-
Town of Dennis	12,365	12,365	12,365	12,365	-	-
Dennis Housing	241	241	241	241	-	-
Dennis Water	1,128	1,128	1,128	1,128	-	-
Dennis-Yarmouth Regional School	5,250	5,250	5,250	5,250	-	-

SECTION 2: Accounting Information for the Barnstable County Retirement System

Employer Name	Deferred Inflows/(Outflows) Recognized In Future Pension Expense (Year Ended June 30):					
	2016 (23)	2017 (24)	2018 (25)	2019 (26)	2020 (27)	Thereafter (28)
Town of Eastham	6,106	6,106	6,106	6,106	-	-
Town of Harwich	10,293	10,293	10,293	10,293	-	-
Hyannis Fire	4,336	4,336	4,336	4,336	-	-
Town of Mashpee	11,506	11,506	11,506	11,506	-	-
Mashpee Housing	161	161	161	161	-	-
Mashpee Water	662	662	662	662	-	-
Town of Nantucket	22,981	22,981	22,981	22,981	-	-
Nantucket Housing	92	92	92	92	-	-
County of Nantucket	852	852	852	852	-	-
Nantucket Regional Transportation Authority	138	138	138	138	-	-
Nauset Regional School	3,247	3,247	3,247	3,247	-	-
North Sagamore Water	207	207	207	207	-	-
Town of Orleans	7,622	7,622	7,622	7,622	-	-
Orleans Housing	184	184	184	184	-	-
Ground Water Protection District	345	345	345	345	-	-
Town of Provincetown	6,470	6,470	6,470	6,470	-	-
Town of Sandwich	13,862	13,862	13,862	13,862	-	-
Sandwich Housing	115	115	115	115	-	-
Sandwich Water	875	875	875	875	-	-
Town of Truro	4,385	4,385	4,385	4,385	-	-
Veterans District	224	224	224	224	-	-
Town of Wellfleet	4,480	4,480	4,480	4,480	-	-
Town of Yarmouth	17,230	17,230	17,230	17,230	-	-
Yarmouth Housing	178	178	178	178	-	-

SECTION 2: Accounting Information for the Barnstable County Retirement System

Employer Name	Deferred Inflows/(Outflows) Recognized In Future Pension Expense (Year Ended June 30):					
	2016 (23)	2017 (24)	2018 (25)	2019 (26)	2020 (27)	Thereafter (28)
West Barnstable Fire	438	438	438	438	-	-
Cape Cod Regional Transit Authority	783	783	783	783	-	-
Monomoy Regional School District	4,007	4,007	4,007	4,007	-	-
Grand Totals:	\$241,713	\$241,713	\$241,713	\$241,713	-	-

Note: Columns may not add due to rounding.

SECTION 3: Supplemental Information for the Barnstable County Retirement System

EXHIBIT I

Actuarial Assumptions and Actuarial Cost Method*

Mortality Rates:

<i>Pre-Retirement:</i>	RP-2000 Employee Mortality Table projected generationally with Scale AA from 2010 (Previously, RP-2000 Employee Mortality Table projected 12 years with Scale AA)
<i>Healthy Retiree:</i>	RP-2000 Healthy Annuitant Mortality Table projected generationally with Scale AA from 2010 (Previously, RP-2000 Healthy Annuitant Mortality Table projected 12 years with Scale AA)
<i>Disabled Retiree:</i>	RP-2000 Healthy Annuitant Mortality Table set forward three years for males only projected generationally with Scale AA from 2010 (Previously, RP-2000 Healthy Annuitant Mortality Table set forward two years for males and females projected 12 years with Scale AA)

The mortality tables were determined to contain provisions appropriate to reasonably reflect future mortality improvement, based on a review of the mortality experience of the plan.

* Used in January 1, 2014 Actuarial Valuation and Review.

SECTION 3: Supplemental Information for the Barnstable County Retirement System

Termination Rates before Retirement:

Age	Groups 1 and 2 - Rate (%)		Disability
	Mortality		
	Male	Female	
20	0.03	0.02	0.01
25	0.04	0.02	0.02
30	0.04	0.03	0.03
35	0.08	0.05	0.06
40	0.11	0.07	0.10
45	0.15	0.11	0.15
50	0.21	0.17	0.19
55	0.30	0.25	0.24
60	0.49	0.39	0.28

Notes: Mortality rates do not reflect generational projection.

55% of the disability rates shown represent accidental disability.

20% of the accidental disabilities will die from the same cause as the disability.

55% of the death rates shown represent accidental death.

Age	Group 4 - Rate (%)		Disability
	Mortality		
	Male	Female	
20	0.03	0.02	0.10
25	0.04	0.02	0.20
30	0.04	0.03	0.30
35	0.08	0.05	0.30
40	0.11	0.07	0.30
45	0.15	0.11	1.00
50	0.21	0.17	1.25
55	0.30	0.25	1.20
60	0.49	0.39	0.85

Notes: Mortality rates do not reflect generational projection.

90% of the disability rates shown represent accidental disability.

60% of the accidental disabilities will die from the same cause as the disability.

90% of the death rates shown represent accidental death.

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Withdrawal Rates:

Years of Service	Rate per year (%)	
	Groups 1 and 2	Group 4
0	15.0	1.5
1	12.0	0.0
2	10.0	
3	9.0	
4	8.0	
5	7.6	
6	7.5	
7	6.7	
8	6.3	
9	5.9	
10	5.4	
11	5.0	
12	4.6	
13	4.1	
14	3.7	
15	3.3	
16 – 20	2.0	
21 – 29	1.0	
30+	0.0	

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Retirement Rates:

Age	Rate per year (%)		Group 4
	Groups 1 and 2		
	Male	Female	
45 – 49	--	--	1.0
50 – 51	1.0	1.5	2.0
52	1.0	2.0	2.0
53	1.0	2.5	5.0
54	2.0	2.5	7.5
55	2.0	5.5	15.0
56 – 57	2.5	6.5	10.0
58	5.0	6.5	10.0
59	6.5	6.5	15.0
60	12.0	5.0	20.0
61	20.0	13.0	20.0
62	30.0	15.0	25.0
63	25.0	12.5	25.0
64	22.0	18.0	30.0
65	40.0	15.0	100.0
66 – 67	25.0	20.0	--
68	30.0	25.0	--
69	30.0	20.0	--
70	100.0	100.0	--

Retirement Age for Inactive Vested Participants:

55 for participants hired prior to April 2, 2012. For participants hired April 2, 2012 or later, 60 for Group 1, 55 for Group 2, and 50 for Group 4. (Previously, 65 for Groups 1 and 2 and 55 for Group 4).

Unknown Data for Participants:

Same as those exhibited by participants with similar known characteristics.

Family Composition:

75% of participants are assumed to be married. None are assumed to have dependent children. Females are assumed to be three years younger than their spouses.

Benefit Election:

All participants are assumed to elect Option A.

SECTION 3: Supplemental Information for the Barnstable County Retirement System

Net Investment Return: 7.75% (previously, 7.875%)

Salary Increases:

Years of Service	Group 1	Group 2	Group 4
0	6.00%	6.00%	7.00%
1	5.50%	5.50%	6.50%
2	5.50%	5.50%	6.00%
3	5.25%	5.25%	5.75%
4	5.25%	5.25%	5.25%
5	4.75%	4.75%	5.25%
6	4.75%	4.75%	4.75%
7	4.50%	4.50%	4.75%
8	4.50%	4.50%	4.75%
9+	4.25%	4.50%	4.75%

Previously,
Years of Service

Years of Service	Groups 1 and 2	Group 4
0	7.00%	8.00%
1	6.50%	7.50%
2	6.50%	7.00%
3	6.00%	6.50%
4	6.00%	6.00%
5	5.50%	6.00%
6	5.50%	5.50%
7	5.00%	5.50%
8	5.00%	5.25%
9	4.75%	5.25%
10+	4.75%	5.25%

SECTION 3: Supplemental Information for the Barnstable County Retirement System

Interest on Employee Contributions: 3.5%

Administrative Expenses: \$1,150,000 for calendar 2014, increasing 4.0% per year (previously, \$1,150,000 for calendar 2012, increasing 4.5% per year).

Total Service: Total creditable service reported in the data.

2013 Salary: 2013 salaries are equal to salaries provided in the data except for participants missing salary, where salaries were calculated from annualized contributions divided by the contribution rates provided.

Net 3(8)(c) Liability: No liability is valued for benefits paid to or received from other municipal retirement systems.

Actuarial Value of Assets: A preliminary actuarial value is first determined by taking the actuarial value of assets at the beginning of the year and adding assumed investment earnings (at the assumed actuarial rate of return) and the net new money during the year (contributions less benefit payments and administrative expenses). Twenty percent of the difference between the market value of assets as reported in the System's Annual Statement and the preliminary actuarial value of assets is added to the preliminary actuarial value. In order that the actuarial value not differ too significantly from the market value of assets, the final actuarial value of assets must be within 20% of the market value of assets.

Actuarial Cost Method: Entry Age Normal Actuarial Cost Method. Entry Age is the attained age of the participant minus total creditable service. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by salary. Normal Cost is determined using the plan of benefits applicable to each participant. (Previously, Normal Cost was determined as if the current plan of benefits had always been in effect.)

SECTION 3: Supplemental Information for the Barnstable County Retirement System

Changes in Assumptions:

This valuation reflects the following changes in actuarial assumptions:

- The actuarial cost method was changed to better reflect the impact of the plan changes effective for employees hired on or after April 2, 2012.
- The investment return assumption was decreased from 7.875% to 7.75%.
- The assumed rates of salary increases were revised to more accurately reflect recent experience and future expectations.
- The pre-retirement mortality assumption was changed from the RP-2000 Employee Mortality Table projected 12 years with Scale AA to the RP-2000 Employee Mortality Table projected generationally using Scale AA from 2010.
- The post-retirement mortality assumption for non-disabled participants was changed from the RP-2000 Healthy Annuitant Mortality Table projected 12 years with Scale AA to the RP-2000 Healthy Annuitant Mortality Table projected generationally using Scale AA from 2010.
- The mortality assumption for disabled participants was changed from the RP-2000 Healthy Annuitant Mortality Table set forward two years projected 12 years with Scale AA to the RP-2000 Healthy Annuitant Mortality Table set forward three years for males only projected generationally using Scale AA from 2010.
- The assumed retirement age for inactive vested participants was changed from age 65 to age 55 for Group 1 and 2 members hired prior to April 2, 2012.

SECTION 3: Supplemental Information for the Barnstable County Retirement System

EXHIBIT II

Summary of Plan Provisions

This exhibit summarizes the major provisions of Chapter 32 of the Laws of Massachusetts.

Plan Year: January 1 through December 31

Retirement Benefits

Employees covered by the Contributory Retirement Law are classified into one of four groups depending on job classification. Group 1 comprises most positions in state and local government. It is the general category of public employees. Group 4 comprises mainly police and firefighters. Group 2 is for other specified hazardous occupations. (Officers and inspectors of the State Police are classified as Group 3.)

For employees hired prior to April 2, 2012, the annual amount of the retirement allowance is based on the member's final three-year average salary multiplied by the number of years and full months of creditable service at the time of retirement and multiplied by a percentage according to the following table based on the age of the member at retirement:

Percent	Age Last Birthday at Date of Retirement		
	Group 1	Group 2	Group 4
2.5	65 or over	60 or over	55 or over
2.4	64	59	54
2.3	63	58	53
2.2	62	57	52
2.1	61	56	51
2.0	60	55	50
1.9	59	--	49
1.8	58	--	48
1.7	57	--	47
1.6	56	--	46
1.5	55	--	45

SECTION 3: Supplemental Information for the Barnstable County Retirement System

A member's final three-year average salary is defined as the greater of the highest consecutive three-year average annual rate of regular compensation and the average annual rate of regular compensation received during the last three years of creditable service prior to retirement.

For employees hired on April 2, 2012 or later, the annual amount of the retirement allowance is based on the member's final five-year average salary multiplied by the number of years and full months of creditable service at the time of retirement and multiplied by a percentage according to the following tables based on the age and years of creditable service of the member at retirement:

For members with less than 30 years of creditable service:

Age Last Birthday at Date of Retirement			
Percent	Group 1	Group 2	Group 4
2.50	67 or over	62 or over	57 or over
2.35	66	61	56
2.20	65	60	55
2.05	64	59	54
1.90	63	58	53
1.75	62	57	52
1.60	61	56	51
1.45	60	55	50

For members with 30 years of creditable service or greater:

Age Last Birthday at Date of Retirement			
Percent	Group 1	Group 2	Group 4
2.500	67 or over	62 or over	57 or over
2.375	66	61	56
2.250	65	60	55
2.125	64	59	54
2.000	63	58	53
1.875	62	57	52
1.750	61	56	51
1.625	60	55	50

SECTION 3: Supplemental Information for the Barnstable County Retirement System

A member's final five-year average salary is defined as the greater of the highest consecutive five-year average annual rate of regular compensation and the average annual rate of regular compensation received during the last five years of creditable service prior to retirement.

For employees who became members after January 1, 2011, regular compensation is limited to 64% of the federal limit found in 26 U.S.C. 401(a)(17). In addition, regular compensation for members who retire after April 2, 2012 will be limited to prohibit "spiking" of a member's salary to increase the retirement benefit.

For all employees, the maximum annual amount of the retirement allowance is 80 percent of the member's final average salary. Any member who is a veteran also receives an additional yearly retirement allowance of \$15 per year of creditable service, not exceeding \$300. The veteran allowance is paid in addition to the 80 percent maximum.

Employee Contributions

<u>Date of Hire</u>	<u>Contribution Rate</u>
Prior to January 1, 1975	5%
January 1, 1975 – December 31, 1983	7%
January 1, 1984 – June 30, 1996	8%
July 1, 1996 onward	9%

In addition, employees hired after December 31, 1978 contribute an additional 2 percent of salary in excess of \$30,000.

Employees hired after 1983 who voluntarily withdraw their contributions with less than 10 ten years of credited service receive 3% interest on their contributions.

Employees in Group 1 hired on or after April 2, 2012 with 30 years of creditable service or greater will pay a base contribution rate of 6%.

Retirement Benefits (Superannuation)

Members of Group 1, 2 or 4 hired prior to April 2, 2012 may retire upon the attainment of age 55. For retirement at ages below 55, twenty years of creditable service is required.

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Members hired prior to April 2, 2012 who terminate before age 55 with ten or more years of creditable service are eligible for a retirement allowance upon the attainment of age 55 (provided they have not withdrawn their accumulated deductions from the Annuity Savings Fund of the System).

Members of Group 1 hired April 2, 2012 or later may retire upon the attainment of age 60. Members of Group 2 or 4 hired April 2, 2012 or later may retire upon the attainment of age 55. Members of Group 4 may retire upon attainment of age 50 with ten years of creditable service.

Members hired April 2, 2012 or later who terminate before age 55 (60 for members of Group 1) with ten or more years of creditable service are eligible for a retirement allowance upon the attainment of age 55 (60 for members of Group 1) provided they have not withdrawn their accumulated deductions from the Annuity Savings Fund of the System.

Ordinary Disability Benefits

A member who is unable to perform his or her job due to a non-occupational disability will receive a retirement allowance if he or she has ten or more years of creditable service and has not reached age 55. The annual amount of such allowance shall be determined as if the member retired for superannuation at age 55 (age 60 for Group 1 members hired on or after April 2, 2012), based on the amount of creditable service at the date of disability. For veterans, there is a minimum benefit of 50 percent of the member's most recent year's pay plus an annuity based on his or her own contributions.

Accidental Disability Benefit

For a job-connected disability, the benefit is 72 percent of the member's most recent annual pay plus an annuity based on his or her own contributions, plus additional amounts for surviving children. Benefits are capped at 75 percent of annual rate of regular compensation for employees who become members after January 1, 1988.

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Death Benefits

In general, the beneficiary of an employee who dies in active service will receive a refund of the employee's own contributions. Alternatively, if the employee were eligible to retire on the date of death, a spouse's benefit will be paid equal to the amount the employee would have received under Option C. The surviving spouse of a member who dies with two or more years of credited service has the option of a refund of the employee's contributions or a monthly benefit regardless of eligibility to retire, if they were married for at least one year. There is also a minimum widow's pension of \$500 (previously, \$250) per month, and there are additional amounts for surviving children.

If an employee's death is job-connected, the spouse will receive 72 percent of the member's most recent annual pay, in addition to a refund of the member's accumulated deductions, plus additional amounts for surviving children. However, in accordance with Section 100 of Chapter 32, the surviving spouse of a police officer, firefighter or corrections officer is killed in the line of duty will be eligible to receive an annual benefit equal to the maximum salary held by the member at the time of death.

Upon the death of a job-connected disability retiree who retired prior to November 7, 1996 and could not elect an Option C benefit, a surviving spouse will receive an allowance of \$12,000 per year (previously, \$9,000) if the member dies for a reason unrelated to cause of disability.

"Heart And Lung Law" And Cancer Presumption

Any case of hypertension or heart disease resulting in total or partial disability or death to a uniformed fireman, permanent member of a police department, or certain employees of a county correctional facility is presumed to have been suffered in the line of duty, unless the contrary is shown by competent evidence. Any case of disease of the lungs or respiratory tract resulting in total disability or death to a uniformed fireman is presumed to have been suffered in the line of duty, unless the contrary is shown by competent evidence. There is an additional presumption for uniformed firemen that certain types of cancer are job-related if onset occurs while actively employed or within five years of retirement.

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Options

Members may elect to receive a full retirement allowance payable for life under Option A. Under Option B a member may elect to receive a lower monthly allowance in exchange for a guarantee that at the time of death any contributions not expended for annuity payments will be refunded to the beneficiary. Option C allows the member to take a lesser retirement allowance in exchange for providing a survivor with two-thirds of the lesser amount. Option C pensioners will have benefits converted from a reduced to a full retirement if the beneficiary predeceases the retiree.

Post-Retirement Benefits

The Board has adopted the provisions of Section 51 of Chapter 127 of the Acts of 1999, which provide that the Retirement Board may approve an annual COLA in excess of the Consumer Price Index but not to exceed a 3% COLA on the first \$15,000 (previously, \$14,000) of a retirement allowance. Cost-of-living increases granted prior to July 1, 1998 are reimbursed by the Commonwealth and not reflected in this report.

Changes in Plan Provisions

As permitted by Section 19 of Chapter 188 of the Acts of 2010, the Cost of Living Adjustment base was increased from \$14,000 to \$15,000 as of July 1, 2013.

Members hired on or after April 2, 2012 are covered by the provisions of Chapter 32 as amended by of Chapter 176 of the Acts of 2011 and Chapter 139 of the Acts of 2012.

As permitted by Section 63 of Chapter 139 of the Acts of 2012, the Board has increased the Section 101 annual allowance from \$9,000 to \$12,000.

As permitted by Section 29 of Chapter 176 of the Acts of 2011, the Board has increased the Section 12 monthly allowance from \$250 to \$500.

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Appendix A

Glossary

Definitions of certain terms *as they are used in Statement 68*; the terms may have different meanings in other contexts.

Active employees:	Individuals employed at the end of the reporting or measurement period, as applicable.
Actual contributions:	Cash contributions recognized as additions to a pension plan's fiduciary net position.
Actuarial present value of projected benefit payments:	Projected benefit payments discounted to reflect the expected effects of the time value (present value) of money and the probabilities of payment.
Actuarial valuation:	The determination, as of a point in time (the actuarial valuation date), of the service cost, total pension liability, and related actuarial present value of projected benefit payments for pensions performed in conformity with Actuarial Standards of Practice unless otherwise specified by the GASB.
Actuarial valuation date:	The date as of which an actuarial valuation is performed.
Actuarially determined contribution:	A target or recommended contribution to a defined benefit pension plan for the reporting period, determined in conformity with Actuarial Standards of Practice based on the most recent measurement available when the contribution for the reporting period was adopted.
Ad hoc cost-of-living adjustments (ad hoc COLAs):	Cost-of-living adjustments that require a decision to grant by the authority responsible for making such decisions.
Ad hoc postemployment benefit changes:	Postemployment benefit changes that require a decision to grant by the authority responsible for making such decisions.
Agent employer:	An employer whose employees are provided with pensions through an agent multiple-employer defined benefit pension plan.

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Agent multiple-employer defined benefit pension plan (agent pension plan):

A multiple-employer defined benefit pension plan in which pension plan assets are pooled for investment purposes but separate accounts are maintained for each individual employer so that each employer's share of the pooled assets is legally available to pay the benefits of only its employees.

Allocated insurance contract:

A contract with an insurance company under which related payments to the insurance company are currently used to purchase immediate or deferred annuities for individual employees. Also may be referred to as an annuity contract.

Automatic cost-of-living adjustments (automatic COLAs):

Cost-of-living adjustments that occur without a requirement for a decision to grant by a responsible authority, including those for which the amounts are determined by reference to a specified experience factor (such as the earnings experience of the pension plan) or to another variable (such as an increase in the consumer price index).

Automatic postemployment benefit changes:

Postemployment benefit changes that occur without a requirement for a decision to grant by a responsible authority, including those for which the amounts are determined by reference to a specified experience factor (such as the earnings experience of the pension plan) or to another variable (such as an increase in the consumer price index).

Closed period:

A specific number of years that is counted from one date and declines to zero with the passage of time. For example, if the recognition period initially is five years on a closed basis, four years remain after the first year, three years after the second year, and so forth.

Collective deferred outflows of resources and deferred inflows of resources related to pensions:

Deferred outflows of resources and deferred inflows of resources related to pensions arising from certain changes in the collective net pension liability.

Collective net pension liability:

The net pension liability for benefits provided through (1) a cost-sharing pension plan or (2) a single-employer or agent pension plan in circumstances in which there is a special funding situation.

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Collective pension expense:	Pension expense arising from certain changes in the collective net pension liability.
Contributions:	Additions to a pension plan's fiduciary net position for amounts from employers, nonemployer contributing entities (for example, state government contributions to a local government pension plan), or employees. Contributions can result from cash receipts by the pension plan or from recognition by the pension plan of a receivable from one of these sources.
Cost-of-living adjustments:	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
Cost-sharing employer:	An employer whose employees are provided with pensions through a cost-sharing multiple-employer defined benefit pension plan.
Cost-sharing multiple-employer defined benefit pension plan (cost-sharing pension plan):	A multiple-employer defined benefit pension plan in which the pension obligations to the employees of more than one employer are pooled and pension plan assets can be used to pay the benefits of the employees of any employer that provides pensions through the pension plan.
Covered-employee payroll:	The payroll of employees that are provided with pensions through the pension plan.
Deferred retirement option program (DROP):	A program that permits an employee to elect a calculation of benefit payments based on service credits and salary, as applicable, as of the DROP entry date. The employee continues to provide service to the employer and is paid for that service by the employer after the DROP entry date; however, the pensions that would have been paid to the employee (if the employee had retired and not entered the DROP) are credited to an individual employee account within the defined benefit pension plan until the end of the DROP period.
Defined benefit pension plans:	Pension plans that are used to provide defined benefit pensions.

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Defined benefit pensions:	Pensions for which the income or other benefits that the employee will receive at or after separation from employment are defined by the benefit terms. The pensions may be stated as a specified dollar amount or as an amount that is calculated based on one or more factors such as age, years of service, and compensation. (A pension that does not meet the criteria of a defined contribution pension is classified as a defined benefit pension for purposes of Statement 68.)
Defined contribution pension plans:	Pension plans that are used to provide defined contribution pensions.
Defined contribution pensions:	Pensions having terms that (1) provide an individual account for each employee; (2) define the contributions that an employer is required to make (or the credits that it is required to provide) to an active employee's account for periods in which that employee renders service; and (3) provide that the pensions an employee will receive will depend only on the contributions (or credits) to the employee's account, actual earnings on investments of those contributions (or credits), and the effects of forfeitures of contributions (or credits) made for other employees, as well as pension plan administrative costs, that are allocated to the employee's account.
Discount rate:	<p>The single rate of return that, when applied to all projected benefit payments, results in an actuarial present value of projected benefit payments equal to the total of the following:</p> <ol style="list-style-type: none">1. The actuarial present value of benefit payments projected to be made in future periods in which (a) the amount of the pension plan's fiduciary net position is projected (under the requirements of Statement 68) to be greater than the benefit payments that are projected to be made in that period and (b) pension plan assets up to that point are expected to be invested using a strategy to achieve the long-term expected rate of return, calculated using the long-term expected rate of return on pension plan investments.2. The actuarial present value of projected benefit payments not included in (1), calculated using the municipal bond rate.

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Entry age actuarial cost method:	A method under which the actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis over the earnings or service of the individual between entry age and assumed exit age(s). The portion of this actuarial present value allocated to a valuation year is called the <i>normal cost</i> . The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future normal costs is called the <i>actuarial accrued liability</i> .
Inactive employees:	Terminated individuals that have accumulated benefits but are not yet receiving them, and retirees or their beneficiaries currently receiving benefits.
Measurement period:	The period between the prior and the current measurement dates.
Multiple-employer defined benefit pension plan:	A defined benefit pension plan that is used to provide pensions to the employees of more than one employer.
Net pension liability:	The liability of employers and nonemployer contributing entities to employees for benefits provided through a defined benefit pension plan.
Nonemployer contributing entities:	Entities that make contributions to a pension plan that is used to provide pensions to the employees of other entities. For purposes of Statement 68, employees are not considered nonemployer contributing entities.
Other postemployment benefits:	All postemployment benefits other than retirement income (such as death benefits, life insurance, disability, and long-term care) that are provided separately from a pension plan, as well as postemployment healthcare benefits, regardless of the manner in which they are provided. Other postemployment benefits do not include termination benefits. ⁴
Pension plans:	Arrangements through which pensions are determined, assets dedicated for pensions are accumulated and managed, and benefits are paid as they come due.
Pensions:	Retirement income and, if provided through a pension plan, postemployment benefits other than retirement income (such as death benefits, life insurance, and disability benefits). Pensions do not include postemployment healthcare benefits and termination benefits.

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Plan members:	Individuals that are covered under the terms of a pension plan. Plan members generally include (1) employees in active service (active plan members) and (2) terminated employees who have accumulated benefits but are not yet receiving them and retirees or their beneficiaries currently receiving benefits (inactive plan members).
Postemployment:	The period after employment.
Postemployment benefit changes:	Adjustments to the pension of an inactive employee.
Postemployment healthcare benefits:	Medical, dental, vision, and other health-related benefits paid subsequent to the termination of employment.
Projected benefit payments:	All benefits estimated to be payable through the pension plan to current active and inactive employees as a result of their past service and their expected future service.
Public employee retirement system:	A special-purpose government that administers one or more pension plans; also may administer other types of employee benefit plans, including postemployment healthcare plans and deferred compensation plans.
Real rate of return:	The rate of return on an investment after adjustment to eliminate inflation.
Service costs:	The portions of the actuarial present value of projected benefit payments that are attributed to valuation years.
Single employer:	An employer whose employees are provided with pensions through a single-employer defined benefit pension plan.
Single-employer defined benefit pension plan (single-employer pension plan):	A defined benefit pension plan that is used to provide pensions to employees of only one employer.
Special funding situations:	<p>Circumstances in which a nonemployer entity is legally responsible for making contributions directly to a pension plan that is used to provide pensions to the employees of another entity or entities and either of the following conditions exists:</p> <p>The amount of contributions for which the nonemployer entity legally is responsible is <i>not</i> dependent upon one or more events or circumstances unrelated to the pensions.</p> <p>The nonemployer entity is the only entity with a legal obligation to make contributions directly to a pension plan.</p>

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Termination benefits:

Inducements offered by employers to active employees to hasten the termination of services, or payments made in consequence of the early termination of services. Termination benefits include early-retirement incentives, severance benefits, and other termination-related benefits.

Total pension liability:

The portion of the actuarial present value of projected benefit payments that is attributed to past periods of employee service in conformity with the requirements of Statement.

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